This listing of the claims replaces all prior versions in the application.

Listing of Claims:

1. (Original) A method of performing brain therapy, comprising:

placing a subject in a main magnetic field;

introducing into the subject's brain a combination imaging and therapeutic probe, the probe including a magnetic resonance imaging antenna and an electrical energy application element;

acquiring a first magnetic resonance image from the antenna of the combination probe;

acquiring a second magnetic resonance image from a surface coil;

combining the first and second magnetic resonance images to produce a composite image;

positioning the combination probe within the brain with guidance from at least one of the images; and

delivering electrical energy to the brain from the electrical energy application element of the combination probe thus positioned.

2. (Original) The method of claim 1, wherein the combination probe is positioned with guidance from the composite image.

3. (Original) The method of claim 1, further comprising:

acquiring a plurality of first images;

acquiring a plurality of respective second images; and

combining each of the plurality of first images with its respective second image to produce a plurality of respective composite images.

4. (Original) The method of claim 3, further comprising constructing a three-dimensional rendering of the brain from a plurality of the composite images.

5. (Original) The method of claim 3, wherein the images are generated in real time or near-real time.

6. (Original) The method of claim 3, wherein the images are generated at a rate of at least 10 frames per second.

7. (Original) The method of claim 1, wherein the combination probe further comprises at least one diagnostic electrode, and the method further comprises measuring an electrical potential with the diagnostic electrode.

8. (Original) The method of claim 7, further comprising guiding a mapping procedure with at least one of the images.

9. (Original) The method of claim 7, further comprising constructing an electrical activation map of the brain with potentials thus measured.

10. (Original) The method of claim 7, further comprising positioning the combination probe with guidance from the composite image to measure the electrical potential.

11. (Original) The method of claim 1, further comprising applying an RF ablative current to the subject from the electrical energy application element.

12. (Original) The method of claim 1, further comprising locating an anatomic target on at least one of the images.

13. (Original) The method of claim 1, further comprising introducing a magnetic resonance contrast agent to enhance at least one of the images.

14. (Original) The method of claim 1, wherein the magnetic resonance imaging antenna and the electrical energy application element are separate components of the combination probe.

15. (Original) A system for performing brain therapy, comprising:

a magnetic resonance machine having a surface coil and means for generating a main magnetic field;

a combination imaging and therapeutic probe, the probe including a magnetic resonance imaging antenna and an electrical energy application element;

means for acquiring a first magnetic resonance image from the antenna of the combination probe;

means for acquiring a second magnetic resonance image from the surface coil;

means for combining the first and second magnetic resonance images to produce a composite image;

means for positioning the combination probe within the brain with guidance from at lest one of the images; and

means for delivering electrical energy to the brain from the electrical energy application element of the combination probe thus positioned.

16. (Original) The system of claim 15, wherein the combination probe further comprises a diagnostic electrode.

17. (Original) The system of claim 15, wherein the magnetic resonance imaging antenna and the electrical energy application element are separate components of the combination probe.

18. (Original) The system of claim 15, further comprising:

means for acquiring a plurality of first images;

means for acquiring a plurality of respective second images; and

means combining each of the plurality of first images with the respective second image to produce a plurality of respective composite images.

19. (Original) The system of claim 18, further comprising means for generating real-time images.

20. (Original) A system for performing brain therapy, comprising:

a combination imaging and therapeutic probe, the probe including a magnetic resonance imaging antenna and an electrical energy application element;

means for acquiring a magnetic resonance image from the antenna of the combination probe;

means for positioning the combination probe within the brain with guidance at least in part from the image; and

means for delivering electrical energy to the brain from the electrical energy application element of the combination probe thus positioned.

21. (New) An MRI combination imaging and interventional probe adapted to cooperate with an MRI scanner, the probe including a magnetic resonance imaging antenna and a plurality of electrodes, at least one configured to detect local electrophysiological signals and at least one configured to apply stimulation or ablation energy to local tissue, the probe sized and configured for insertion into a brain of a patient during an *in vivo* MRI guided therapeutic treatment.

22. (New) An MRI probe according to Claim 21, further comprising at least one RF filter circuit residing between each electrode and an interface with the MRI scanner, the at least one RF filter configured to suppress an MR imaging signal while allowing RF ablative current to be delivered to the at least one electrode.

23. (New) An MRI probe according to Claim 22, wherein the at least one RF filter circuit comprises an inductor and capacitor.

24. (New) An MRI probe according to Claim 21, in combination with an MRI scanner, wherein the MRI scanner generates a composite image using signal data from the probe antenna and signal data from an external surface coil, and wherein the MRI scanner is configured to generate the composite image in substantially real time to prove composite images used during an interventional procedure to guide placement of a distal end portion of the MRI probe.